

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Gilbert Wolrich et al.

Art Unit : 2661

Serial No.: 10/684,078

Examiner : Unknown

Filed : October 10, 2003 Title : METHOD AND A

: METHOD AND APPARATUS FOR GIGABIT PACKET ASSIGNMENT FOR

MULTITHREADED PACKET PROCESSING

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

## INFORMATION DISCLOSURE STATEMENT

Applicant submits the references listed on the attached form PTO-1449. Applicant has not provided copies of the US patents in accordance with the waiver posted on the USPTO website.

This statement is being filed within three months of the filing date of the application or before the receipt of a first Office action on the merits. Please apply any charges or credits to deposit account 06-1050, 10559-132002.

Respectfully submitted,

Date: 4/29/04

Denis G. Maloney Reg. No. 29,670

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: (617) 542-5070 Facsimile: (617) 542-8906

132002ids.doc

## CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

30 April 2004

Signature MICHECCE LA RIVERS

Typed or Printed Name of Person Signing Certificate

Substitute Form PTO-1449 (Modified)

U.S. Department of Commerce Patent and Tradernark Office Attorney's Docket No. Application No. 10559-132002 10/684,078

Information Disclosure Statement by Applicant (Use several sheets if necessary) Applicant Gilbert Wolrich et al. 10/064,076

(37 CFR §1.98(b))

Filing Date Group Art Unit 10/10/03 2661

				nt Documents			
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
/TN/	AA	6,694,380	02/17/2004	Wolrich et al.	Olass	Oubclass	п Арргорнаю
	AB	6,681,300	01/20/2004	Wolrich et al.			
.	AC	6,668,317	12/23/2003	Bernstein et al.	†		
	AD	6,667,920	06/09/2003	Wolrich et al.			
	AE	6,661,794	12/09/2003	Wolrich et al.			
	AF	6,631,462	10/07/2003	Wolrich et al.			
	AG	6,631,430	10/07/2003	Wolrich et al.			
	AH	6,625,654	09/23/2003	Wolrich et al.			
	AI	6,606,704	08/12/2003	Adiletta et al.			
	AJ	6,587,906	07/01/2003	Wolrich et al.			
	AK	6,584,522	06/24/2003	Wolrich et al.			
	AL	6,577,542	06/10/2003	Wolrich et al.			
	AM	6,560,667	05/06/2003	Wolrich et al.			
	AN	6,552,826	04/22/2003	Adler et al.			
	AO	6,532,509	03/11/2003	Wolrich et al.			
	AP	6,463,072	10/08/2002	Wolrich et al.			
	AQ	6,434,145	08/13/2002	Opsasnick et al.			
	AR	6,430,626	08/06/2002	Witkowski et al.			
	AS	6,427,196	07/30/2002	Adiletta et al.	<u> </u>		
	AT	6,426,940	07/30/2002	Seo et al.			
	AU	6,415,338	0702/2002	Habot			
	AV	6,393,483	05/21/2002	Latif et al.			
	AW	6,389,449	05/14/2002	Nermirovsky et al.			
	AX	6,373,848	04/16/2002	Allison et al.			
	AY	6,360,262	03/19/2002	Guenthner et al.			
V	AZ	6,356,692	03/12/2002	Kasper et al.			
/TN/	AAA	6,347,344	02/12/2002	Baker et al.			

Examiner Signature

/Toan Nguyen/

Date Considered

10/25/2008

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

U.S. Department of Commerce Patent and Trademark Office Substitute Form PTO-1449 Attorney's Docket No. Application No. (Modified) 10559-132002 10/684.078 Applicant Information Disclosure Statement Gilbert Wolrich et al. by Applicant (Use several sheets if necessary) Filing Date Group Art Unit 10/10/03 2661 (37 CFR §1.98(b))

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
7TN/	ABB	6,345,334	02/05/2002	Nakagawa et al.			
	ACC	6,324,624	11/27/01	Wolrich et al.			
	ADD	6,307,789	10/23/2001	Wolrich et al.			
	AEE	6,298,370	10/02/2001	Tang et al.			
	AFF	6,289,011	09/11/2001	Seo et al.			
	AGG	6,279,113	08/21/2001	Vaidya			
	AHH	6,275,505	08/14/2001	O'Loughlin et al.			
	AII	6,272,616	08/07/2001	Fernando et al.			
	AJJ	6,256,713	07/03/2001	Audityan et al.			
	AKK	6,247,025	06/12/2001	Bacon			
	ALL	6,223,279	04/24/2001	Nishimura et al.			
	AMM	6,223,238	04/24/2001	Meyer et al.			
	ANN	6,223,207	04/24/2001	Lucovsky et al.			
	AOO	6,216,220	04/10/2001	Hwang			
	APP	6,212,611	04/03/2001	Nizar et al.			
	AQQ	6,212,542	04/03/2001	Kahle et al.			
	ARR	6,201,807	03/18/2001	Prasanna			
	ASS	6,199,133	03/06/2001	Schnell			
	ATT	6,195,676	02/27/2001	Spix et al.			
	AUU	6,182,177	01/30/2001	Harriman			
	AVV	6,160,562	12/12/2000	Chin et al.			
	AWW	6,157,955	12/05/2000	Narad et al.			
	AXX	6,145,054	11/07/2000	Mehrotra et al.			
	AYY	6,144,669	11/07/2000	Williams et al.			
	AZZ	6,141,765	10/31/2000	Sherman			
V	AAAA	6,141,689	10/31/2000	Yasrebi			
/TN/	ABBB	6,134,665	10/17/2000	Klein et al.			

Examiner Signature /Toan Nguyen/ Date Considered 10/25/2008

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Form PTO-1449 (Modified)

(37 CFR §1.98(b))

U.S. Department of Commerce Patent and Trademark Office Attomev's Docket No. Application No. 10559-132002 10/684.078 Applicant

Information Disclosure Statement by Applicant (Use several sheets if necessary)

Gilbert Wolrich et al. Filing Date Group Art Unit 10/10/03 2661

U.S. Patent Documents Examiner Desig. Document Publication Filing Date Initial ID Number Date Patentee Class Subclass If Appropriate /TN/ ACCC 6,112,016 08/29/2000 MacWilliams et al. ADDD 6.092,158 07/18/2000 Harriman et al. AEEE 6.092.127 07/18/2000 Tausheck AFFF 6 085 294 07/04/2000 Van Doren et al AGGG 6.085,215 07/04/2000 Ramakrishnan et al. AHHH 6.079.008 06/20/2000 Clery, III AIII 6,073,215 06/06/2000 Snyder AJJJ 6.072,781 06/06/2000 Feeney et al. AKKK 6.070.231 05/30/2000 Ottinger 6,067,585 ALLL 05/23/2000 Hoang AMMM 6.058,168 05/02/2000 Braband ANNN 6.023.742 02/08/2000 Ebeling et al. A000 6,014,729 01/11/2000 Lannan et al. APPP 6.012,151 01/04/2000 Mano 5.983.274 11/09/1999 AQQQ Hyder et al. ARRR 5,978,838 11/02/1999 Heinrich et al ASSS 5.970.013 10/19/1999 Fischer et al. ATTT 5.961.628 10/05/1999 Nguyen et al. AUUU 5,958,031 09/28/1999 Kime AVVV 5.948.081 09/07/1999 Foster AWWW 5.946,487 08/31/1999 Dangelo AXXX 5.940.866 08/17/1997 Chisholm et al. AYYY 5.940.612 08/17/1999 Brady et al. AZZZ 5.937.187 08/21/1995 Kosche et al. AAAAA 5.928.736 08/17/1999 Muller et al ABBBB 5.915.123 06/22/1999 Mirsky et al.

Examiner Signature /Toan Nauven/

5.905.889

ACCCC

Date Considered 10/25/2008

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Wilhelm, Jr.

05/18/1999

U.S. Department of Commerce Substitute Form PTO-1449 Attorney's Docket No. Application No. Patent and Trademark Office (Modified) 10559-132002 10/684,078 Information Disclosure Statement Applicant Gilbert Wolrich et al. by Applicant (Use several sheets if necessary) Filing Date Group Art Unit 10/10/03 2661 (37 CFR §1.98(b))

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
/TN/	ADDDD	5,905,876	08/18/1999	Pawlowski et al.			
	AEEEE	5,892,979	04/06/1999	Shiraki et al.			
	AFFFF	5,890,208	03/30/1999	Kwon			
	AGGGG	5,887,134	03/23/1999	Ebrahim			
	АНННН	5,886,992	03/23/1999	Raatikaien et al.			
	AIIII	5,860,158	01/12/1999	Pai et al.			
	AJJJJ	5,854,922	12/29/1998	Gravenstein et al.			
	AKKKK	5,835,755	11/10/1998	Stellwagen, Jr.			
	ALLLL	5,832,215	11/03/1998`	Kato et al.			
	AMMMM	5,828,863	10/27/1998	Barrett et al.			
	ANNNN	5,828,746	10/27/1998	Ardon			
	A0000	5,812,868	11/22/1998	Moyer et al.			
	APPPP	5,809,530	09/15/1998	Samra et al.			
	AQQQQ	5,809,235	09/15/1998	Sharma et al.			
	ARRRR	5,797,043	08/18/1998	Lewis et al.			
	ASSSS	5,796,413	08/18/1998	Shipp et al.			
	ATTTT	5,784,712	07/21/1998	Byers et al.			
	AUUUU	5,784,649	07/21/1998	Begur et al.			
	AVVVV	5,781,774	07/14/1998	Krick			
	AWWWW	5,761,522	06/02/1998	Hisanga et al.			
	AXXXX	5,761,507	06/02/1998	Govett			
	AYYYY	5,751,987	04/12/1998	Mahant-Shetti et al.			
	AZZZZ	5,745,913	04/28/1998	Pattin et al.			
	AAAAA	5,742,822	04/21/1998	Motomura			
	ABBBBB	5,742,782	04/21/1998	Ito et al.			
V	ACCCCC	5,742,587	04/21/1998	Zornig et al.			
/TN/	ADDDDI	5,721,870	02/24/1998	Matsumoto			

Examiner Signature /Toan Nguyen/ Date Considered 10/25/2008

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Group Art Unit

2661

U.S. Department of Commerce Substitute Form PTO-1449 Attornev's Docket No. Application No. (Modified) Patent and Trademark Office 10559-132002 10/684.078 Information Disclosure Statement Applicant Gilbert Wolrich et al. by Applicant (Use several sheets if necessary)

(37 CFR §1.98(b))

Filing Date

10/10/03

U.S. Patent Documents Examiner Desia. Document Publication Filing Date Initial ID Number Date Patentee Class Subclass If Appropriate /TN/ AEEEEE 5,717,898 02/10/1998 Kagan et al. AFFFFF 5,699,537 12/16/1997 Sharangpani et al. AGGGGd 5.689.566 11/18/1997 Nguyen AHHHHH 5,680,641 10/21/1997 Sidman AIIIII 5,659,687 08/19/1997 Kim et al. AJJJJJ 5.649.157 07/15/1997 Williams AKKKKK 5,644,623 07/01/1997 Gutledge ALLLLL 5,630,641 05/13/1997 Perotto et al. MMMMI 5,627,829 05/06/1997 Gleeson et al. ANNNNN 5,623,489 04/22/1997 Cotton et al A0000d 5,613,136 03/18/1997 Casavant et al. APPPPP 5,613,071 03/18/1997 Rankin et al. AQQQQ 5,592,622 01/07/1997 Isfeld et al. ARRRRR 5.574,922 11/12/1996 James ASSSSS 5.568.617 10/22/1996 Kametani ATTTTT 5.557.766 09/17/1996 Takiguchi et al. AUUUUU 5,550,816 08/27/1996 Hardwick et al. AVVVV 5,544,236 08/06/1996 Andruska et al. wwww 5.542.088 07/30/1996 Jennings, Jr. et al. AXXXXX 5.542.070 07/30/1996 LeBlanc et al. 05/14/1996 AYYYYY 5,517,648 Bertone et al. AZZZZZ 5.467.452 11/14/1995 Blum et al AAAAAA 5,463,625 10/31/1995 Yasrebi 10/17/1995 ABBBBB 5,459,842 Begun et al. ACCCCC 5,452,437 09/19/1995 Richev et al. ADDDDDD 5,450,351 09/12/1995 Heddes AEEEEEE 5,448,702 09/05/1995 Garcia, Jr. et al.

Examiner Signature /Toan Nguyen/	Date Considered	10/25/2008
EXAMINER: Initials citation considered. Draw line through citation if no next communication to applicant.	t in conformance and	not considered. Include copy of this form with

Substitute Form PTO-1449 U.S. Department of Commerce Attorney's Docket No. Application No. Patent and Trademark Office (Modified) 10559-132002 10/684,078 Applicant Information Disclosure Statement by Applicant Gilbert Wolrich et al. (Use several sheets if necessary) Filing Date Group Art Unit 10/10/03 2661

(37 CFR §1.98(b))

			U.S. Pate	nt Documents			
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
/TN/	AFFFFF	5,432,918	07/11/1995	Stamm			
	AGGGGG	5,404,484	04/04/1995	Bennett			
•	АННННН	5,404,482	04/04/1995	Stamm et al.			
	AIIIIII	5,392,412	02/21/1995	McKenna			
	AJJJJJJ	5,392,411	02/21/1995	Ozaki			
	AKKKKK	5,392,391	02/21/1995	Caulk, Jr. et al.			
	ALLLLLI	5,390,329	02/14/1995	Gaertner et al.			
	ммммм	5,367,678	11/22/1994	Lee et al.			
	ANNNNN	5,347,648	09/13/1994	Stamm et al.			
	400000	5,263,169	11/16/1993	Genusov et al.			
	APPPPPF	5,255,239	10/19/1993	Taborn et al.			
	AQQQQQ	5,173,897	12/22/1992	Pfeiffer et al.			
	ARRRRRI	5,168,555	12/01/1992	Byers et al.			
	ASSSSS	5,155,854	10/13/1992	Flynn et al.			
	ATTTTT	5,155,831	10/13/1992	Emma et al.			
	AUUUUU	5,142,683	08/25/1992	Burkhardt, Jr. et al.			
	AVVVVV	5,140,685	08/18/1992	Sipple et al.			
	wwww	4,866,664	09/12/1989	Burkhardt, Jr. et al.			
	AXXXXX	4,745,544	05/17/1988	Renner et al.			
	AYYYYY	4,523,272	06/11/1985	Fukunaga et al.			
	AZZZZZZ	4,514,807	04/30/1985	Nogi			
	AAAAA	4,400,770	08/23/1983	Chan et al.			
	вввввв	4,130,890	12/19/1978	Adam			
	ccccc	3,940,745	02/24/1976	Sajeva			
	DDDDDI	3,792,441	02/12/1974	Wymore et al.			
V	AEEEEEE	3,478,322	11/11/1969	Evans			
/TN/	AFFFFFF	3,373,408	03/12/1968	Ling			

Examiner Signature	/Toan Nguyen/	Date Considered	10/25/2008

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Form PTO-1449 (Modified)

U.S. Department of Commerce Patent and Trademark Office Attorney's Docket No. Application No. 10559-132002 10/684,078 Apolicant Gilbert Wolrich et al.

Group Art Unit

2661

Information Disclosure Statement by Applicant (Use several sheets if necessary)

(37 CFR §1.98(b))

			U.S. Pate	ent Documents			
Examine Initial	Desig.	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
/TN/	GGGGGG	10/726,757	12/03/2003	Wolrich et al.			
	ннннн	10/664,202	09/16/2003	Wolrich et al.			
	AIIIIIII	10/644,337	08/20/2003	Wolrich et al.			
	AJJJJJJ	10/643,438	08/19/2003	Bernstein et al.			
	KKKKKK	10/615,500	07/08/2003	Adiletta			
	ALLLLLL	10/615,280	07/08/2003	Wolrich et al.			
	иммммі	10/440,079	05/15/2003	Wolrich et al.			
	NNNNN	09/476,303	12/30/1999	Wolrich et al.			
	000000	09/475,614	12/30/1999	Wolrich at al.			
V	APPPPPP	09/473,571	12/28/1999	Wolrich et al.			
/TN/	QQQQQQ	09/387,109	08/31/1999	Adiletta et al.			

Filing Date

10/10/03

	-	Foreig	n Patent Doo	uments or P	ublished Foreign	Patent /	Application	15	
	niner	Desig.	Document	Publication	Country or	T			lation
	tial	ID	Number	Date	Patent Office	Class	Subclass	Yes	No
/TN	1/	RRRRRR	WO 01/50679	07/12/2001	WIPO				
		ASSSSSS	WO 01/50247	07/12/2001	WIPO				
		ATTTTTT	WO 01/48619	07/05/2001	WIPO				
П		บบบบบเ	WO 01/48606	07/05/2001	WIPO	-			
		vvvvv	WO 01/48596	07/05/2001	WIPO				
		wwww	WO 01/16782	03/08/2001	WIPO				
		XXXXX	WO 01/16770	03/08/2001	WIPO				
		YYYYY	WO 01/16769	03/08/2001	WIPO				
		AZZZZZZ	WO 01/15718	03/08/2001	WIPO				
		аааааа	WO 97/38372	10/16/1997	WIPO				
		вввввв	WO 94/15287	07/07/1994	WIPO				
V	/	cccccc	EP 0 809 180	11/26/1997	Europe				
/TŇ	/	DDDDDD	EP 0 745 933	12/04/1996	Europe				

Examiner Signature

/Toan Nauven/

Date Considered 10/25/2008

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attomey's Docket No. 10559-132002	Application No. 10/684,078
by A	closure Statement oplicant	Applicant Gilbert Wolrich et al.	
(Use several si	heets if necessary)	Filing Date 10/10/03	Group Art Unit 2661

	Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Trans Yes	lation No	
/TN/	EEEEEEE	0 633 678	01/11/1995	Europe					
	<b>∕</b> FFFFFF	EP 0 464 715	01/08/1992	Europe					
w	cggggg	EP 0 379 709	08/01/1990	Europe		,			
,/TN/	ннннн	59111533	06/27/1984	Japan					

	Other Doc	uments (include Author, Title, Date, and Place of Publication)
Examine	Di ID	• .
r Initial Desig. ID		Document Document
/TN/	AIIIIIII	Byrd et al., "Multithread Processor Architectures," <i>IEEE Spectrum</i> , Vol. 32, No. 8, New York, 1 August 1995, pp. 38-46.
	AJJJJJJJ	Doyle et al., Microsoft Press Computer Dictionary, 2 <sup>nd</sup> ed., Microsoft Press, Redmond, Washington, USA, 1994, p. 326.
	KKKKKKKK	Fillo et al., "The M-Machine Multicomputer," IEEE Proceedings of MICRO-28, 1995, pp. 146- 156.
	LLLLLLLL	Gomez et al., "Efficient Multithreaded User-Space Transport for Network Computing: Design and Test of the TRAP Protocol," <i>Journal of Parallel and Distributed Computing</i> , Academic Press, Duluth, Minnesota, USA, vol. 40, no. 1, 10 January 1997, pp. 103-117.
	ммммммм	Haug et al., "Reconfigurable hardware as shared resource for parallel threads," IEEE Symposium on FPGAs for Custom Computing Machines, 1998.
	ииииииии	Hauser et al., "Garp: a MIPS processor with a reconfigurable coprocessor," Proceedings of the 5th Annual 1EEE Symposium on Field-Programmable Custom Computing Machines, 1997.
	0000000	Hyde, R., "Overview of Memory Management," Byte, vol. 13, no. 4, 1998, pp. 219-225.
	<b>₽PPPPPPP</b>	Litch et al., "StrongARMing Portable Communications," IEEE Micro, 1998, pp. 48-55.
	cqqqqqqq	Schmidt et al., "The Performance of Alternative Threading Architectures for Parallel Communication Subsystems," Internet Document, Online!, 13 November 1998.
	RRRRRRR	Thistle et al., "A Processor Architecture for Horizon," IEEE, 1998, pp. 35-41.
	∕sssssss	Tremblay et al., "A Three Dimensional Register File for Superscalar Processors," IEEE Proceedings of the 28th Annual Hawaii International Conference on System Sciences, 1995, pp. 191-201.
	лтттттт	Trimberger et al, "A time-multiplexed FPGA," Proceedings of the 5 <sup>th</sup> Annual IEEE Symposium on Field-Programmable Custom Computing Machines," 1998.
	เบบบบบบบ	Turner et al., "Design of a High Performance Active Router," Internet Document, Online, 18 March 1999.
V	·vvvvvv	Vibhatwanij et al., "Simultaneous Multithreading-Based Routers," Proceedings of the 2000 International Conference of Parallel Processing, Toronto, Ontario, Canada, 21-24 August 2000, pp. 362-359.
/TN/	wwwwww	Wazlowski et al., "PRSIM-II computer and architecture," IEEE Proceedings, Workshop on FPGAs for Custom Computing Machines, 1993.

Examiner Signature /Toan Nguyen/	Date Considered	10/25/2008
EXAMINER: Initials citation considered. Draw line through citation if no next communication to applicant.	t in conformance and	not considered. Include copy of this form with